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Oxford, Mississippi, July 1866.

After more than five years suspension of the greater part of its operations, the Geological and Agricultural Survey of the State has resumed its activity, under the organization it possessed for eighteen months prior to the war. For the present year its field operations will necessarily remain suspended for want of the requisite funds, but it is intended they shall be resumed at the earliest possible moment, in the spring of the coming year. Meanwhile, the office work, especially the examination of soils, marls, rocks, mineral waters, etc., will steadily progress, not, it is hoped, to be again interrupted. In announcing the fact, I renew the invitation to all those desiring such examinations, or able to contribute specimens or facts to illustrate the resources of the State, to communicate with me.

There never was a time when the information intended to be elicited and conveyed to the people through the instrumentality of this work, was so much needed as at present, when everything requires to be "reconstructed." As regards our agricultural habits and practices, it is universally admitted that a mere return to the *status quo ante bellum* would be worse than unwise; it would be ruinous, and in a great degree practically impossible. We are compelled to make the most of what means the war has left us, in developing the natural resources of the country under the new circumstances and necessities which have arisen. To aid the people in doing this intelligently and to the best advantage, by a careful and thorough observation of facts, and the application to them of correct principles, as derived from the observation and experience of the present and past ages is the province and object of a Geological and Agricultural Survey.

It is this observation of facts, needful above all, which constitutes the heaviest portion of the work, and that in which, unless assisted by the people, the most skillful observer must fall short of what no one better than himself knows is requisite to give to his conclusions that *practical* value, with a view to which chiefly the work was undertaken. It is quite impossible within the limits of time and expenditure usually allotted, to attain by personal examination a knowledge of all the minute details with which long residence has made even the most unobservant inhabitant familiar.

Such assistance, in my travels through the State, I have constantly asked, and as a rule, it has been freely given; and I deeply regret my inability at present, to refer those who have done so to my report of results, made to the Legislature in 1860,* for proof that the seed they sowed has not fallen upon sterile soil.

In the interests of the objects of the Survey, I most earnestly solicit contributions from all friends of material and intellectual, agricultural and educational progress. Specimens of *rocks, clays, marls, earths and soil*, are especially desirable and important, and scarcely less so what are usually considered as mere curiosities—*fossil shells, bones or leaves*. The latter are among the most essential means available to the geologist, of ascertaining the geological structure of a country; without which its agricultural and technical resources cannot be estimated. Fossils are the landmarks in the depths of the earth, the letters of the geological alphabet; hence the practical and scientific importance which attaches to their study. It is extremely desirable that it should be generally known how valuable are all individual contributions of this character, especially if accompanied by accurate *labels*, giving the exact locality, depth, etc., at which the specimen was obtained. The best preserved specimens are commonly found casually, in digging wells, cisterns, cellars, railroad cuts, etc., and would, if preserved and combined, form a finer collection than any which could be gathered during a systematic survey.

I equally request the communication of all *observations or questions*, bearing upon the material resources or natural history of the State, whether illustrated by specimens or not. Questions must be mooted before they can be settled; and it is often not among the least difficult tasks to stir up those which most interest the people of any particular section of country. I shall, as heretofore, give prompt attention to all communications of this kind, furnishing in return such information as I possess, or can derive from the examination of specimens sent; and where no satisfactory conclusion can be reached, keeping the matter on record for future investigation.

The Survey is now so far advanced towards completion, that all the chief geological and agricultural features have been determined, and are represented in the collection of specimens. Many interesting and important details still remain to be investigated; but there is no longer, for example, any doubt as to what minerals may or may not be looked for in the various sections, and that, apart from iron ore, no metallic ores are to be expected. But it is not this kind of mineral wealth which assures the most desirable species of prosperity. Mines enrich individuals rather than the people at large. Agriculture and the arts immediately connected with it, form the surest basis

of the prosperity and independence of a commonwealth, and in her natural resources, in this respect, Mississippi is excelled by few, if any States in the Union.

But the richest sources of wealth avail nothing, if left to lie idle from ignorance of their existence or mode of development; and the richest soil may speedily be rendered sterile by a wasteful and improvident mode of culture. That the last mentioned evil has already become a crying one in this State, few will deny. Heretofore the practice in such cases has been the abandonment of the ill-treated soil to broom-sedge and persimmon bushes. That this mode of proceeding cannot be indulged in hereafter—that it is the direct road to bankruptcy and ruin of any agricultural community, need but be mentioned to be admitted by the most careless. How then is the evil to be prevented in future, and how is the injury already done to be remedied?

There are some who seem to expect that science ought to give them some magical formula, by which, without additional trouble, they might continue to live carelessly as heretofore. But it is not by patent recipes, or crude experimenting, but by the path of experience illuminated by common sense and sound reasoning, (which constitutes science,) that we must seek this consummation devoutly to be wished.

First—*We must study our soils, and the means provided by nature for the maintenance or resuscitation of their fertility.*

Secondly—*We must teach what we have so learned to our agriculturists*, especially the young, together with the principles of rational agriculture.

An *Agricultural Survey* is the needful preliminary step towards the establishment of truly practical *Schools of Agriculture*, in which the youth of the land shall be taught, not only what they ought to do in certain supposititious cases, but what, in fact and in practice, are the cases they will have to deal with.

Both these important objects were contemplated in the intention of the Survey, but the former alone has thus far been essentially promoted, on account both of the incompatibility, at first, of the duties of a teacher and chief of the Survey, and the comparative inutility of merely theoretical instruction in this branch.

Both objections having ceased to exist, by reason of the advanced state of the work, it is hoped that now, under the pressing demand for information of this kind, the second and most important part of the programme can be made to resume its place, and a chance for agricultural education be afforded the agriculturist. The facts and principles set forth by a printed report will be long in becoming a part of popular consciousness, unless they are brought to bear on the rising generation, and made part and parcel of their education.

But the success of all that has been and can be done, depends always and pre-eminently upon the intelligent interest of the agricultural population in the advancement of their pursuit, and of their own prosperity. The scientific investigator can but show the ways and means: it is for them to avail themselves of the information conveyed, and in their turn to exert themselves to amplify and complete it.

The State, through a large portion of its length and breadth is underlaid by marls and greensands, excelled by none in New Jersey or Virginia, where they have made the wilderness of broom-sedge bloom like the rose. But what does this knowledge avail a man who prefers raising a quarter of a bale of cotton per acre, to doubling his crops by digging marl pits on one half his land? What if the lands supposed to be worn out are shown to be merely in a state of "suspended animation," waiting but intelligent culture to reclaim them, if no one is found willing to bestow it? What if it is shown that artesian water can be made to flow where the poisonous magnesian waters are now daily quaffed, if the chronic ague is preferred to the trouble of boring the wells? We have beds of lignite, or brown coal, traversed by railroads; but our grates (if grates we will have) continue to be fed with Pittsburg coal, and the native product is known only as "black dirt."

Let all contribute to the extent of their ability, towards a systematic knowledge and development of their resources, and the prosperity of Mississippi will soon be re-established upon a firmer basis than ever before.

Persons residing within more convenient reach of Oakland College than Oxford, may address Prof. GEORGE LITTLE of that institution, who has courteously offered his co-operation.

EUG. W. HILGARD,

State Geologist of Mississippi.

*It may be proper here to mention that this report, containing a record and discussion of the results thus far obtained by the survey, was printed in an edition of 5,000 copies in 1860; but in consequence, first of the blockade, and since of pecuniary and legislative difficulties, it still remains in the hands of the book-binder.

